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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GEORGE E. RICHARDS, JOSEPH M. FERENCZ,
VINCENT A. GASPAR, JAROSLAV O. HRUSZKEWYCZ,
and ANGELA K. STAUFER

Appeal 2009-004017
Application 10/809,764
Technology Center 1700

Decided: December 29, 2009

Before JEFFREY T. SMITH, BEVERLY A. FRANKLIN, and
JEFFREY B. ROBERTSON, *Administrative Patent Judges*.

ROBERTSON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-9, 12-19, and 21-24.¹ (App. Br. 2). We have jurisdiction pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

THE INVENTION

Appellants describe a process for manufacturing thermosetting powder coating compositions including hard to incorporate additives and/or a process that can provide dynamic color control. (Spec. [0001]). Claims 1 and 13, reproduced below, are representative of the subject matter on appeal.

1. A process for manufacturing thermosetting powder coating compositions, comprising:

A) feeding a base material comprising as dry ingredients, a resin and a curing agent to an extruder from an initial position;

B) injecting at least one hard to incorporate additive from a pressure vessel to the base material after the base material enters the extruder and before it exits the extruder, wherein the pressure in the pressure vessel is maintained at less than 100 psi; and

C) passing the combined base material and hard to incorporate additive(s) through at least a portion of the extruder to form a thermosetting powder coating composition.

13. A process for manufacturing thermosetting powder coating compositions, comprising:

A) feeding a base material comprising as dry ingredients, a resin and a curing agent to an extruder from an initial position;

¹ Claims 10 and 11 have been canceled and claims 12, 16, and 20 have been withdrawn from consideration. (Appeal Brief filed July 11, 2008, hereinafter "App. Br.," 2).

- B) adding at least one hyperdispersed pigment to the base material; and
- C) passing the combined base material and hyperdispersed pigment(s) through at least a portion of the extruder to form a thermosetting powder coating composition; wherein the hyperdispersed pigment(s) in step B) are added either separately from the base material or with the base materials, and when added with the base material, the hyperdispersed pigment(s) are in the form of a dried liquid pigment dispersion that has been formed from a liquid pigment dispersion comprising greater than 5 weight percent organic solvent.

THE REJECTIONS

The following grounds of rejection under 35 U.S.C. § 103(a) are presented for review (App. Br. 5-6; Examiner's Answer entered September 3, 2009, hereinafter "Ans.," 3-13):

the Examiner rejected claims 1, 3-7, and 9 as being unpatentable over Harmuth (US 4,320,048 issued March 16, 1982) in view of Chang (US 4,973,439 issued November 27, 1990);

the Examiner rejected claim 2 as being unpatentable over Harmuth in view of Chang and either Rudolph (US 4,684,488 issued August 4, 1987) or Fintel (US 4,919,872 issued April 24, 1990);

the Examiner rejected claims 7 and 8 as being unpatentable over Harmuth in view of Chang, and further in view of Rathschlag (US 6,638,353 B1 issued October 28, 2003) or Dietz (US 6,537,364 B2 issued March 25, 2003);

the Examiner rejected claims 13 and 15 as being unpatentable over Harmuth in view of either Vanier (US 2003/0125417 A1 published July 3, 2003) or Dietz;

the Examiner rejected claim 14 as being unpatentable over Harmuth in view of either Vanier or Dietz, and further in view of either Rudolph or Fintel;

the Examiner rejected claims 17-19 as being unpatentable over Harmuth in view of either Vanier or Dietz, and further in view of either Rudolph or Fintel;

the Examiner rejected claims 21 and 22 as being unpatentable over Harmuth in view of either Vanier or Dietz, and further in view of Chang; and

the Examiner rejected claims 23 and 24 as being unpatentable over Harmuth in view of either Vanier or Dietz, and further in view of either Rudolph or Fintel, and further in view of Chang.

Appellants have grouped certain claims subject to each of the grounds of rejection separately. However, Appellants rely on similar arguments for the rejections of claims 1-9 as well as similar arguments for claims 13-15, 17-19, and 21-24. Accordingly, we confine our discussion to appealed claims 1, 2, 5, 9, and 13, which contain claim limitations representative of the arguments made by Appellants pursuant to 37 C.F.R. § 41.37(c)(1)(vii).²

Claims 1-9

In rejecting claim 1, the Examiner found that “the pigment dispersion [the recited hard to incorporate additive] employed by Harmuth is implicitly

² Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make have not been considered and are deemed to be waived. See 37 C.F.R. § 41.37(c)(1)(vii) (2009).

fed from some vessel and that this vessel is reasonably understood to be a low-pressure vessel.” (Ans. 4). The Examiner additionally noted that “one having ordinary skill would have been motivated to control the pressure as low as possible for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet environmental requirements to minimize vapor emissions.” (*Id.*). The Examiner also pointed to Harmuth’s disclosure employing toluene as a dispersing fluid for the pigment dispersion as evidence that the pressure vessel used to inject the pigment would be at a pressure less than 100 psi. (Ans. 14).

Appellants contend that both Harmuth and Chang disclose significantly higher operating pressures, which amount to a difference in kind, not in degree such that the prior art teaches away from the recited pressure range. (App. Br. 9-10). Appellants also argue that the Declaration of Joseph M. Ferencz (hereinafter “the Ferencz Declaration”) demonstrates that one skilled in the art would not be able to practice the prior art methods at the pressures as claimed. (App. Br. 11).

ISSUES

The issues on appeal are:

Have Appellants shown that the Examiner reversibly erred in determining that the evidence tending to show that the pressure in a pressure vessel employed in accordance with Harmuth’s pigment dispersion is less than 100 psi outweighs the evidence that the pressure in the pressure vessel would be greater than 100 psi?

Have Appellants shown that the Examiner reversibly erred in determining that Harmuth suggests forming different powder coatings from the same base material as recited in claim 5?

Have Appellants shown that the Examiner erred in determining that Harmuth discloses incorporating flow additives other than in the base material as recited in claim 9?

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Appellants' Specification defines "hard to incorporate additives" as: "additives that are not readily dispersed during the extrusion process, including pigments [and] flow additives." (Spec. para. [0008]).
2. Harmuth describes a method of forming a pigmented powder coating composition where a substantially dry base material is introduced into a melt-extruder and a pigment dispersion is introduced into the extruder downstream from the introduction of base material. (Col. 1, l. 55 – col. 2, l. 7).
3. Harmuth discloses that the pigment dispersion is metered into the extruder downstream of the base material. (Col. 6, ll. 15-27).
4. Harmuth provides examples of a variety of pigments and additives that may be added to the powder composition. (Col. 3, ll. 25-35).
5. Harmuth states: "[f]low control additives such as silicone resins can also be used." (Col. 3, ll. 36-37).

6. Harmuth describes an example of a pigment dispersion that contains toluene and a dispersant (copolymer of methyl methacrylate/butyl methacrylate in 50/50 weight ratio). (Col. 5, ll. 50-62).
7. Rudolph describes a method of controlling the coloration of an extruded product by measuring and adjusting the supply of concentrates and additives as necessary during the extruding process. (Col. 1, ll. 48-63).
8. Fintel discloses a method for the introduction of color concentrates being processed in a melt extruder. (Col. 1, ll. 58-65).
9. Fintel's color concentrates enter the extruder through guide tube 108, downstream from where the base material enters the extruder through supply tube 115. (*See* Col. 4, ll. 34-48, Figs. 4-5).

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

In *KSR*, the Supreme Court explained, "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of

ordinary skill can implement a predictable variation, §103 likely bars its patentability.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

ANALYSIS

At the outset, we agree with the Examiner that Appellants’ arguments that the recited method is operated at a pressure of less than 100 psi is not commensurate in scope with claim 1. (Ans. 14). Claim 1 only requires that the pressure vessel be maintained at a pressure less than 100 psi. Claim 1 is silent as to the pressure at which the extruding process is performed. Accordingly, we are not persuaded by Appellants’ argument that the prior art discloses significantly higher operating pressures than the 100 psi upper limit required in claim 1. Moreover, Appellants do not dispute the Examiner’s position that because Harmuth employs toluene as a dispersing fluid, one of ordinary skill in the art would not be required or even inclined to employ pressures greater than 100 psi. (Ans. 14).

We also agree with the Examiner that the Ferencz Declaration is not persuasive. (*Id.*). Appellants do not dispute the Examiner’s statements that the Ferencz Declaration refers to extrusion pressure rather than the pressure vessel used to feed the claimed additive into the extruder. Thus, Appellants’ arguments that the Ferencz Declaration demonstrates that one of ordinary skill in the art would not be able to practice the prior art methods at the recited pressures or that the small difference of using low pressure provides a significant advantage are not sufficient to demonstrate error on the part of the Examiner. (App. Br. 11, Reply Brief filed November 3, 2008, 3).

Regarding claim 2, Appellants contend that Rudolph and Fintel only teach dynamic control at the inlet point such that there is no suggestion or

implication to add additives at a downstream location. (App. Br. 11-12). We agree with the Examiner that Harmuth discloses that the pigments are added downstream from the base material. (Ans. 16, FF 2-3). Accordingly, Appellants' argument that neither Rudolph nor Fintel addresses this limitation fails to consider the Examiner's rejection as a whole. Moreover, we agree with the Examiner that Fintel does disclose downstream addition of pigments. (Ans. 16; FF 9). Appellants have provided no evidence that one of ordinary skill in the art would have been unable to modify Harmuth's method to include dynamic control of color in a manner consistent with the downstream addition of pigment disclosed in Harmuth.

Regarding claim 5, Appellants' argument that nothing in Harmuth suggests or implies a base material that is suitable for the production of more than one thermosetting powder coating from the same base material (App. Br. 12-13) is not persuasive. Appellants acknowledge that Harmuth discloses that "a variety of extrudates may be produced from a variety of base material and/or pigment dispersions." (App. Br. 12). This is consistent with the Examiner's finding that Harmuth discloses that different pigments may be employed such that the same base material may be employed with different pigment dispersions in order to produce powder coating compositions with different colors. (*See Ans. 4-5 and 16*). In addition, Appellants' argument that Harmuth's process could not be used to produce a variety of thermosetting powder compositions from one base material "because different compositions are likely to vary not just as to the pigment dispersion added, but as to any number of hard to incorporate additives," is without merit. (App. Br. 13). Appellants have not directed us to any persuasive evidence on the record that supports this argument.

Regarding claim 9, we are not persuaded by Appellants' argument that Harmuth discloses that the flow control additive is added exclusively as part of the base material. (App. Br. 13-14). Harmuth discloses the addition of conventional additives, such as flow control additives to the powder coatings. (FF 4-5). Appellants have not presented any persuasive arguments that one of ordinary skill in the art would not have added a flow control additive to the pigment dispersion in for its intended purpose in order to improve flow of the pigment dispersion as desired.

In addition, Appellants have not presented any persuasive arguments regarding the Examiner's interpretation that the toluene and copolymer dispersant of Harmuth's pigment dispersions fall within the recited "flow additives." (Ans. 17). Accordingly, we affirm the Examiner's rejection of claim 9.

Claims 13-15, 17-19, and 21-24

The Examiner found that Harmuth does not expressly teach that the pigments employed by Harmuth are "hyperdispersed" pigments as recited in the claims. (Ans. 10). The Examiner found that each of Vanier and Dietz disclose pigments that are suitable and desirable for powder coating applications and meet the "hyperdispersed" limitation in the claims. (Ans. 7 and 10). The Examiner determined that it would have been obvious to employ the pigments of Vanier or Dietz in Harmuth because Vanier discloses that the colorants yield desired visible colors and Dietz suggests that the pigments have reduced levels of foreign contamination and a narrow size distribution. (Ans. 7, 11, and 18).

Appellants contend that neither Vanier nor Dietz disclose a hyperdispersed pigment as defined in the Specification, because the references fail to disclose pigments that have undergone both a grinding and dispersion step. (App. Br.14). Appellants admit that Vanier discloses pigments of comparable size, but there is no teaching to prepare the pigments in the manner as claimed. (App. Br. 15). Appellants argue that Dietz only teaches pigment solutions, not dispersions and that the pigments of Dietz do not contain dried solubilized resin as required by the claims. (App. Br. 15-16).

ISSUE

Based on Appellants' contentions an additional issue on appeal is:

Have Appellants shown that the Examiner erred in determining that the prior art discloses "hyperdispersed pigment(s)" as recited in claim 13?

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

10. Appellants' Specification defines "hyperdispersed pigments" as: "pigments that have been subjected to additional grinding *and/or* dispersion steps that result in the pigments having an average particle size of two microns or less." (Spec. 4, para. [0009]) (emphasis added).
11. Dietz discloses a process for the fine division of pigments that "prevents the possibility of contamination by foreign substances and produces especially fine particles with a particularly narrow size distribution." (Col. 1, ll. 42-45).

12. Dietz discloses that the average particle size of the pigments is 26 nm (0.026 µm). (Col. 10, ll. 12-14).
13. Vanier discloses pigments that have a primary particle size of less than about 150 nm (0.150 µm). (Para. [0022]).

PRINCIPLES OF LAW

During examination, claims terms must be given their broadest reasonable construction consistent with the Specification. *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007). Although claims are interpreted in light of the Specification, limitations from the Specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). “[A]s applicants may amend claims to narrow their scope, a broad construction during prosecution creates no unfairness to the applicant or patentee.” *Icon Health and Fitness*, 496 F.3d at 1379.

ANALYSIS

We are not persuaded by Appellants’ contention that the prior does not disclose “hyperdispersed pigment” as recited in claim 13. Appellants’ Specification clearly states that a hyperdispersed pigment is a pigment that is either subjected to an additional grinding step, a dispersion step, or both, such that the pigments have an average particle size of two microns or less. (FF 10). In addition, claim 13 allows for the hyperdispersed pigment to be added either at the same location as the base material or added to the extruder with the base material. Claim 13 specifically recites: “when added with the base material, the hyperdispersed pigment(s) are in the form of a dried pigment dispersion that has been formed from a liquid dispersion

comprising greater than 5 weight percent organic solvent.” Thus, when properly interpreted in light of the Specification, neither the Specification, nor the specific limitations of claim 13 requires that the hyperdispersed particle be present as a dried liquid pigment dispersion when added to the extruder downstream of the base material.

In light of the above claim interpretation, we are not persuaded by Appellants’ attempt to impermissibly import limitations from the Specification by arguing that neither Dietz nor Vanier discloses an additional dispersion step or the presence of dried solubilized resin. (App. Br. 14-16). Such limitations are not required in the case of Harmuth’s method, where the pigments are added to the extruder downstream of the base material. Thus, Appellants’ arguments that the claims are limited to the manipulation of dry ingredients are not persuasive. (*See* App. Br. 18).

Moreover, Appellants do not contest that both Dietz and Vanier disclose pigments having particle sizes within the range set forth in the Specification in the definition for hyperdispersed pigment. (App. Br. 15, FF 12-13). Nor do Appellants contest the Examiner’s reasoning for substituting the conventional pigments in Dietz and Vanier in the compositions of Harmuth. Accordingly, we affirm the Examiner’s rejection of claim 13.

ORDER

We affirm the Examiner’s decision rejecting claims 1-9, 12-19, and 21-24 under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. §1.136(a)(1)(iv).

AFFIRMED

Appeal 2009-004017
Application 10/809,764

PL initial:
sld

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